

## Second Report on the Mosquitoes of the Transvaal.

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This second report is based mainly on the large collection (fourteen store boxes full) sent by Dr. Theiler from Onderstepoort\*.

The specimens were mainly taken in mosquito traps as before on the Government Farm at Onderstepoort, and labelled M.T. 1, M.T., 2, M.T. 3, in connection with the Horse Sickness investigations. The specimens were collected from the end of 1910 to 1911.

The other culicidae were bred from larvae taken on the farm.

Three new species are recorded, namely, *Pseudohowardina lineata*, *Grabhamia caballa* and *Uranotaenia nivipous*; also two new varieties, one of *Culex salisburyensis*, Theo. and the other of *Culex theileri*, Theob.

Three species previously unrecorded in the Transvaal occur in the collection, namely, *Culex cumminsii*, Theob., *Culex quiarti* Blanchard and *Chrysoconops fuscopennatus* Theob.

The insect previously recorded as *Taeniorhynchus tenax* var. *maculipes* Theob. is undoubtedly the same as my *Culex quasigelidus*. This has to come in the genus *Pseudotaeniorhynchus*, Theob., and occurs in the collection in its three forms, namely, true *quasigelidus* Theob., *maculipes*, Theob. and *arabiensis*, Patton.

The generic name *Mansonia*, Blanchard, used in the previous report has to sink as a synonym of *Taeniorhynchus* Arribalzaga (vide *Novae Culicidae*, Part I., April, 1911, page 18 Theobald). For the species of *Taeniorhynchus mihi* (non Arribalzaga), I have proposed the name *Pseudotaeniorhynchus*.

The previous synoptic table has been revised and brought up to date. Some notes are also given in connection with Mr. F. W. Edwards' recent paper\*, which is one of great value, but appears to have been too hastily constructed. It might have been better to have studied the mosquitoes for a few years before launching into a subject of which it appears at present his knowledge is very slight.

\* The remaining boxes contain Tabanidae, etc.

\* The African species of *Culex* and allied genera. Bulletin of Entomological Research II. pp. 241-268 (1911).

## SYNOPTIC TABLE OF TRANSVAAL CULICIDAE.

## SUB-FAMILY ANOPHELINÆ.

Genus *Myzomyia*, Blanchard.

- $\alpha$  Legs banded; wing fringe spotted; palpi 3 white bands, apex white ... .. *funesta*, Giles.  
 $\beta$  Legs spotted and banded; wing fringe spotted; palpi 4 white bands, apex white ... .. *pyretophoroides*, Theobald.  
 $\gamma$  Legs unbanded; no fringe spots; 3rd long vein dark; apex of palpi dark ... .. *rhodesiensis*, Theobald.

Genus *Pyretophorus*, Blanchard.

- $\alpha$  Legs spotted and banded.  
 $\beta$  Last tarsals brown.  
 $\gamma$  Femora tibiae and first tarsals spotted.  
     Tarsal bands apical and basal.  
 $\delta$  White palpal bands 3.  
     Apical band wide ... .. *costalis*, Loew.  
     Last two wide ... .. *marshallii*, Theobald.  
 $\delta\delta$  White palpal bands 4.  
     Apex white ... .. *quadriannulatus*, Theobald.  
 $\beta\beta$  Last 2 hind tarsals all white; thorax golden scaled.  
     Palpi 3 white bands ... .. *albipes*, Theobald.  
     Palpi 4 white bands ... .. *aureosquamiger*, Theobald.  
 $aa$  Legs banded only.  
     Palpi with 4 white bands ... .. *cinereus*, Theobald.  
     Palpi with 3 white bands ... .. *transvaalensis*, Carter.

Genus *Cellia*, Theobald.

- $\alpha$  Apical segment of abdomen with ochreous yellow scales; legs banded ... .. *squamosa*, Theobald.  
 $aa$  Apical segment of abdomen with white scales:—  
     Tarsi of hind legs black ... .. *argenteolobata*, Gough.  
     First 3 tarsi of legs apically pale banded *pretoriensis*, Gough.

Genus *Myzorhynchus*, Blanchard.

- Last two hind tarsals white ... .. *mauritanus*, Grandpré.  
 Last three hind tarsals white ... .. *paludis*, Theobald.  
 Genus *Nyssorhynchus*, Blanchard.  
 Thorax white scaled.  
 Last 2 hind tarsals white; palpi not spotted  
     *pretoriensis*, Theobald.  
 Last 3 hind tarsals white; palpi spotted *maculipalpis*, Giles.

## SUB-FAMILY CULICINÆ.

Genus *Mucidus*, Theobald.

- Clothed with shaggy scales ... .. *africanus*, Theobald.

Genus *Stegomyia*, Theobald.

- $\alpha$  Legs basally banded.  
 Thorax with 2 median yellow lines and lateral curved white lines ... .. *fasciata*, Fabr.  
 Thorax with 2 lateral white spots, first largest, small median one near head, 2 yellow median lines and a short silvery one each side before scutellum ... .. *simpsoni*, Theobald.

- aa Legs unbanded.  
 Thorax 6 silvery spots ... *argenteopunctata*, Theobald.
- Genus *Scutomyia*, Theobald.  
 Legs basally banded ;  
 Thorax white spots ... .. *sugens*, Wiedemann.
- Genus *Psuedohowardina*, Theobald.  
 Legs unbanded, femora white line beneath ;  
 Thorax with golden scaled lines ... *lineata*, nov. sp.
- Genus *Theobaldia*, Neveu-Lemaire.  
 Wings and legs spotted ... .. *spathipalpis*, Rondani.
- Genus *Culex*, Linnaeus.  
 A. Proboscis banded.  
 a Legs basally banded and mottled ;  
 Abdomen basally banded ... *transvaalensis*, Theobald.  
 Abdomen with two apical spots on 5th and 6th segments as  
 well as bands ... .. *hirsutum*, Theobald.
- aa Legs apically and basally banded.  
 β Tibiae mottled :  
 Abdomen with basal triangular spots and apical lateral  
 spots ... .. *annulioris*, Theobald.
- ββ Tibiae not mottled :  
 Abdomen with basal semi-circular pale spots, proboscis  
 band broad ... .. *hirsutipalpis*, Theobald.
- aaa Legs unbanded ... .. *ataeniata*, Theobald.
- AA. Proboscis unbanded.  
 γ Legs basally banded ... .. *caballa*, nov. sp.
- γγ Legs with femora and tibiae spotted or lined.  
 δ Abdomen with basal pale areas :  
 Head and thorax brown ... .. *theileri*, Theobald.  
 Head and thorax pale scaled *onderstepoortensis*, Theobald.
- δδ Abdomen with apical pale bands :  
 Legs spotted in lines ... .. *tigripes*, Grandpré.
- γγγ Legs with apical and basal banding :  
 Thorax deep brown paler at the sides in front  
*bifoliata*, Theobald.
- γγγγ Legs unbanded.  
 δ Abdomen with basal pale bands :  
 ε Abdomen without basal lateral spots, thorax usually with  
 2 median bare lines, mottled with pale ochreous and  
 reddish-brown scales ... .. *simpsoni*, Theobald.
- εε Abdomen with white lateral basal spots nearly the whole  
 length of the segments. Thorax with traces of 3 lines  
 and more uniformly scaled ... .. *minutus*, Theobald.
- δδ Abdomen with basal median pale areas and large pale basal  
 lateral spots.  
 ξ Palpi all dark (♀) :— *pallidopunctata*, Theobald.  
 ξξ Palpi with a white scaled line in ♂ and ♀  
*goughii*, Theobald.

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\* This comes in the Genus *Grahamia*.

- $\delta\delta\delta$  Abdomen with apical pale bands.  
 $\eta$  Large species. ... .. *cumminsii*, Theobald.  
 $\eta\eta$  Small species.  
 $\theta$  Apical pale bands on all the segments ; post cross-vein more than twice its length from mid  
*salisburyensis*, Theobald.  
 $\theta\theta$  Apical pale bands on 2nd and 3rd segments only ; post cross-vein its own length from mid ... .. *bostockii*, Theobald.  
 $\delta\delta\delta\delta$  Abdomen unbanded :  
 With basal lateral spots ... .. *quasiqiarti*, Theobald.  
 $\alpha$  No basal lateral spots ... .. *qiarti*, Blanchard.

Genus *Banksinella*, Theobald.

- Thorax golden scaled on each side. Legs unbanded.  
 Abdomen unbanded ... .. *luteolateralis*, Theobald.

Genus *Pseudotaeniorhynchus*, Theobald.

Front  $\frac{2}{3}$  thorax paler than rest.

- $\alpha$  Legs unspotted ... .. *tenax*, Theobald.  
 $\alpha\alpha$  Legs spotted  
 Abdomen with basal median spots and apical lateral ones.  
*quasiqelidus*, Theobald.  
 Abdomen with some apical bands and spots  
 var. *maculipes*, Theobald.  
 Abdomen with basal pale bands ... .. var. *arabiensis*, Patton.

Genus *Chrysoconops*, Goeldi.

- $\alpha$  Legs unbanded. Thorax and abdomen orange yellow. Wings yellow scaled ... .. *aurites*, Theobald.  
 $\alpha\alpha$  Legs banded.  
 Wings with pale brownish scales ... .. *fuscopennatus*, Theobald.

Genus *Taeniorhynchus*, Arribalzaga.

- Wings with dark and pale large bracket shaped scales ; thorax ornamented with usually 2 pale spots and 2 pale lines. Legs banded ... .. *africanus*, Theobald.

Genus *Etiorleptomyia*, Theobald.

- Wing scales heart-shaped ... .. *mediolineata*, Theobald.

SUB-FAMILY AEDINAE.

Genus *Aedes*, Meigen.

- Abdomen unbanded, dark brown, head ochreous brown  
*inconspicuus*, Theobald.

SUB-FAMILY URANOTAENINAE.

Genus *Pseudoficalbia*, Theobald.

- Abdomen deep brown, unbanded ; thorax deep brown, pleurae pale brown ... .. *inornata*, Theobald.

Genus *Uranotaenia*, Arribalzaga.

- Last 2 hind tarsals white ; abdomen with apical pale bands  
*nivipous*, nov. sp.

THREE NEW SPECIES OF CULICIDAE AND TWO NEW  
VARIETIES.

GENUS PSEUDHOWARDINA, THEOBALD.

*Pseudohowardina lineata*, nov. sp.  
(See Plate 34.)

Head deep brown with a median white line and a thin white line around the eyes; proboscis deep brown with a line of white scales on the basal half. Thorax deep brown, with three thin pale yellow lines and a thin white one on each side; two broken white lines on the pleurae and spots. Abdomen deep brown with traces of apical white bands and apical spots. Legs deep brown, unbanded, femora with a white line beneath and in certain lights the tibiae are pale yellow. Male palpi acuminate, no hair tufts, brown.

*Female*.—Head with a large area on each side of flat dark scales, separated by a broad line of white narrow-curved scales, some pale narrow-curved scales behind and a border of white ones around the eyes; numerous thin dark upright forked scales and long dark chaetae projecting over the eyes; sides of the head white scaled; palpi small, black scaled with a few white ones at the apex and more or less a line of them down one side; proboscis dark with a line of white scales on the basal half; antennae and clypeus dark brown.

Thorax deep blackish-brown with a median and two submedian lines of narrow curved pale golden yellow scales, the median one passing around the bare space in front of the scutellum, a broader line of white narrow curved scales at the sides, the dark intervening areas with scanty dark brown narrow-curved scales; chaetae dark; scutellum dark with pale yellow narrow-curved scales, posterior border bristles to mid-lobe golden, those on the lateral lobes black; metanotum dark; pleurae brown with two lines of white scales, those of the upper line spindle-shaped, those of the lower spatulate, two spots of flat white scales below. Legs black, unbanded, the femora with a prominent white line below and to some extent the tibiae, apex of femora white; legs spiny, spines dark; ungues equal and simple.

Abdomen deep brown, the last few segments with traces of apical white bands which spread out into more prominent white spots laterally, in one specimen the bands are represented by a few scales only; posterior border bristles pale; venter with scattered pale scales. Wings with the first fork-cell longer and narrower than the second, its base nearer the base of the wing, its stem not quite half the length of the cell, stem of the second about as long as the cell; posterior cross-vein rather more than twice its own length distant from the mid.

*Length*.—3.5 to 4.5 mm.

*Male*.—Head, thorax and abdomen as in female. Palpi brown, thin, acuminate, not quite as long as the proboscis, apparently of only two segments, the apical segment more than half the length of the penultimate one, ending in a stout spine and with four large chaetae and a smaller one on each side; proboscis with an irregular line of

white scales up to the apex; antennae with brown plume hairs. Fore and mid unguis unequal, uniserrate, hind equal and simple.

Abdominal banding rather more prominent than in the female.

*Length*.—4 mm.

*Habitat*.—Onderstepoort, Transvaal.

*Time of Capture*.—August 8th and 11th.

*Observations*.—Described from 3 females and one male bearing on the labels M.T. 1, 8.8.11, 4753; M.T. 3, 24.8.11, 4976; O.P. August, 1910.

A very marked species easily identified by the thoracic ornamentation. The amount of abdominal banding seems very variable.

*Types* in writer's collection.

### GENUS *CULEX*, Linnaeus.

*Culex salisburyensis*, Theobald.

var. *amboannulatus*, nov. var.

*Male only*.—Thorax brown with golden scales; head golden brown scaled; proboscis brown unbanded; palpi brown with three yellow bands, acuminate, hair tufts brown.

Abdomen deep brown with creamy apical bands and nude shiny silvery basal bands to most of the segments. Legs deep brown, unbanded.

*Male*.—Head brownish black with rather large narrow-curved golden scales; flat creamy ones at the sides and dark chaetae; very small upright forked scales; proboscis uniformly deep brown; palpi deep brown with three yellowish bands, acuminate, last two segments nearly equal in length, the apical and second bands involve both sides of the joints of the last two segments and the apex of the antepenultimate have long brown hairs; antennae grey with narrow dark bands and dark brown plume hairs. Thorax with deep shiny brown integument with narrow-curved golden scales, slightly paler before the scutellum; chaetae brown; scutellum pale greyish-brown with narrow-curved creamy scales and rich brown border-bristles, six to the mid-lobe; metanotum chestnut brown with a round dark spot on each side near the base. Abdomen with deep brown scales, the first segment with a few golden and deep brown scales and pale golden hairs, the second with an apical median creamy spot, the third to eighth with prominent apical creamy bands, the bases of the segments nude and silvery, giving a double banded appearance; hairs brown with golden reflections apically. Legs unbanded, femora pale at base and beneath; apices of femora pale; fore and mid unguis unequal, uniserrate.

Wings with the first submarginal cell considerably longer and narrower than the second, its base much nearer the base of the wing, its stem about two-thirds the length of the cell; stem of the second posterior cell as long as the cell; posterior cross-vein nearly twice its own length distant from the mid.

*Length*.—5 mm.

*Habitat*.—Onderstepoort.

*Time of Capture*.—14.8.11.

*Observations.*—Described from one perfect male, labelled M.T. 3. 4808. Very near *Culex salisburiensis*, Theobald, if not the same species but larger, and with larger headscales and more golden scaled thorax.

The marked pale basal nude areas are particularly characteristic. I have failed to detect this in a large series of *salisburiensis*, on the other hand the general characters of palpi, ungues and wings are so similar, that I have treated it as a variety only.

*Type* in the writer's collection.

*Culex theileri*, Theobald.

var. *annulata*, nov. var.

Resembles the typical form in general appearance and in leg markings and veination, but the abdomen has basal pale semi-circular bands and very small basal lateral spots.

Two females from Onderstepoort labelled M.T. 1, 22.11.10 and 19.8.11, 4881.

*Type* in the writer's collection.

#### GENUS GRABHAMIA, THEOBALD.

*Grabhamia caballa*, nov. sp.

(See Plate 35.)

Head and thorax clothed with rich deep golden scales, a dark patch on each side of the head, the thorax showing traces of linear markings, chaetae golden; palpi and proboscis deep brown, antennae brown.

Abdomen deep brown with basal creamy bands which spread out to form large spots laterally and also send out median processes which may form a dorsal line. Legs brown, mottled with creamy scales and with basal pale bands. Wings with brown and creamy scales.

*Female.*—Head deep brown clothed with large narrow-curved golden scales and golden chaetae projecting forwards between the eyes, dark chaetae at the sides; on each side an area of dark flat scales, surrounded by flat pale creamy ones;\* palpi and proboscis black; antennae very dark, basal segment with small flat pale creamy scales.

Thorax deep rich brown clothed with narrow-curved rich golden scales and with golden chaetae, in some specimens traces of bare indistinct lines behind; scutellum with similar scales and golden border-bridles; pleurae dark with patches of creamy scales; metanotum dark brown. Abdomen deep brown with basal creamy bands which spread out laterally, to form large spots which often extend the whole length of the segments, the basal bands also spread out in the middle, especially so on the last few segments, in some specimens a median dorsal pale line is thus formed, border-bridles pale golden.

Legs with the femora pale at the base and on venter, dark above with dark chaetae and scattered pale scales, apex creamy, in mid and hind legs; tibiae dark mottled with pale scales, first three tarsals basally pale banded, least prominent on the hind legs; ungues all equal and uniserrate. Wings mottled with dark and creamy scales,

\* *Yellow upright forked scales on the occiput, black ones at the sides.*  
(*G.a., H.B.*)

fork cells short, the first longer and narrower than the second, its base nearer the apex of the wing than that of the second, its stem about as long as the cell, stem of the second fork-cell also about as long as the cell; posterior cross-vein about half its own length distant from the mid.

*Length*.—4 to 5 mm.

*Habitat*.—Onderstepoort, Transvaal.

*Time of Capture*.—November, December and January.

*Observations*.—Described from a number of females, caught in the mosquito traps and bearing the following labels: M.T. 3, 31.12.10, 2653; M.T. 2, 16.11.10, 2155; 1.1.11, 2663; M.T. 1, 18.1.11, 2655; 16.4.11, 4230; 16.11.10, 2151; 12.11.10, 2106; 8.1.11, 2730; 18.1.11, 2857; 15.11.10, 2133; 16.11.10, 2152; 24.12.10, 2543; 14.11.10, 2122. This species comes near *Genus durbanensis*, Theobald, but can be told at once by the hind ungues being uniserated. There is much variation in the amount of pale scaling on the abdomen.

*Type* in the writer's collection.

## GENUS URANOTAENIA, ARRIBALZAGA.

### *Uranotaenia nivipous*, nov. sp.

Head deep brown; proboscis deep brown. Thorax rich brown with long dark chaetae; pleurae pale ochreous. Abdomen black with apical creamy median areas, venter pale creamy white. Legs deep brown, pale at the base; last two hind tarsi and most of the third creamy white, the last tarsus of the other legs showing pale reflections.

*Female*.—Head clothed with deep brown flat scales and rather short, broad, rich golden forked scales; two long black chaetae project forwards in front between the eyes, a shorter one on each side of the head and another in mid border of eyes; clypeus brown, antennae brown, basal segment bright ferrugineous; verticillate hairs brown; palpi small, brown; proboscis deep brown. Thorax rich deep brown with scanty small narrow-curved brown scales with golden reflections and with numerous long, curved backwardly projecting brown chaetae, the integument is paler under the wings and then dark again, the pale ochreous pleurae being marked off in a straight line and having a few flat pale scales; scutellum brown with flat dusky brown scales, dark border-bristles, from the mid-lobe; metanotum brown. Abdomen black above, with median apical creamy areas, pale golden posterior border bristles; venter pale creamy, almost white in some lights.

Legs deep brown with bronzy reflections, pale at the base, a pale apical spot on the femora and tibiae, last two hind tarsi creamy white and most of the third, in the other legs the last tarsus shows pale reflections.

Wings with brown scaled veins, the outer costal border, the first, the sub-costal, the second and fourth showing brilliant violet reflections under the two-third power; first fork cell narrower and smaller than the second, its apex nearer the apex of the wing, its stem about

three times the length of the cell, stem of the second fork-cell about twice the length of the cell; posterior cross-vein much longer than the mid, about its own length distant from it.

*Length*.—4 mm.

*Time of Capture*.—1.1.11.

*Observations*.—Described from a single perfect female. It comes near *U. apricotaeniata*, Theobald, but can be told by the dark scaled head and by the absence of apical pale bands on the first, second and third hind tarsals and second tarsals of the fore and mid.

The brilliant violet colour of some of the wing veins under the two-thirds power is also very marked.

*Type* in the writer's collection.

## RECORD OF PREVIOUSLY DESCRIBED SPECIES.

### ANOPHELINAE.

#### GENUS MYZOMYIA, BLANCHARD.

*Myzomyia funesta*, Giles (1900).

*Anopheles funesta*, Giles (1900).

*Anopheles Kumasi*, Chalmers (1900).

Mem. Liverpool School of Tropical Medicine III. 50 (1900), Giles;  
Mono. Culicid. 1. 178 (1901); III. 34 (1903); IV. 46 (1907); V.  
(1910), Theobald.

Six quite normal females, labelled as follows:—M.T. 1, 21.8.11, 4921; 28.3.11, 2922; 2.4.11, 4024; M.T. 3, 22.2.11, 3247; 11.5.11, 4415; 20.3.11, 3050.

#### GENUS NYSSORHYNCHUS, BLANCHARD.

*Nyssorhynchus pretoriensis*, Theobald (1903).

Mono. Culicid. III., 79 (1903); V. 59 (1910).

Three typical females labelled as follows:—M.T. 3, 19.10.10, 1752; 28.10.10, 1850; 27.3.11, 3912.

#### GENUS MYZORHYNCHUS, BLANCHARD.

*Myzorhynchus mauritianus*, Grandpré.

*Anopheles mauritianus*, Grandpré.

*Anopheles paludis*. v. *similis*, Theobald.

*Anopheles tenebrosus*, Dönitz.

Evidently common at Onderstepoort from the number in the collections, labelled as follows:—

- M.T. 3, 25.5.11, 4537; 4508; 16.8.11, 4795; 4601; 27.5.11, 4528; 12.6.11, 4588; 6.8.11, 4749; 7.6.11, 4515; 1.7.11, 4632; 22.5.11, 4513; 10.5.11, 4404; 17.8.11, 4861; 30.8.11, 5042; 5043; 25.8.11, 4984; 28.8.10, 860; 30.3.11, 3762; 3973; 25.3.11, 3901; 19.3.11, 3576; 3757; 28.2.11, 3325; 19.2.11, 3212; 30.1.11, 3027; 2.3.11, 3362; 29.2.11, 3213; 23.2.11, 3262; 15.4.11, 4191; 10.5.11, 4401; 9.4.11, 4124; 11.4.11, 4170; 21.4.11, 4257; 22.4.11, 4264; 4.11.10, 1941; 1942; 8.11.10, 2041; 2042.
- M.T. 2, 5.4.11, 4077; 18.3.11, 3751; 3752; 25.3.11, 3898; 3.3.11, 3370; 2.3.11, 3356; 13.2.11, 3175; 27.4.11, 4306; 11.4.11, 4161; 19.4.11, 4238; 1.6.11, 4737; 4546.
- M.T. 1, 28.1.11, 2986; 5.2.11, 3089; 10.4.11, 4140; 7.6.11, 4561; 3.6.11, 4554.

GENUS PYRETOPHORUS, *BLANCHARD*.

*Pyretophorus aureosquamiger*, Theobald (1907).

Mono. Culicid. IV., 73 (1907).

A very long series showing but little variation labelled as follows:

- M.T. 1, 16.8.11, 4816; 17.8.11, 4832, 4830; 6.12.10, 2351; 19.12.10, 2491; 20.8.11, 4897, 4920, 4922; 12.8.10, 783; 11.8.10, 7022; 11.9.10, 1103; 22.2.11, 3240; 27.2.11, 3299; 2.1.11, 2677; 16.4.11, 4193, 4195, 4192; 17.4.11, 4216; 12.4.11, 4171; 10.5.11, 4393, 4394; 9.4.11, 4120; 15.4.11, 4188; 23.4.11, 4267; 14.4.11, 4184; 4.5.11, 4370; 18.4.11, 4231; 2.5.11, 4346; 11.4.11, 4160; 7.11.10, 2022; 16.11.10, 2153; 1.8.11, 4733; 28.7.11, 4708, 4709, 4706; 10.7.11, 4673; 12.7.11, 4687; 17.6.11, 4604; 1.8.11, 4734; 29.7.11, 4743; 28.7.11, 4710; 27.5.11, 4527; 6.8.11, 4744, 4745; 19.10.10, 1745; 16.10.10, 1657; 25.10.10, 1827; 19.8.11, 4880, 4883.
- M.T. 2, 17.8.11, 4838; 2.7.10, 1022; 17.8.11, 4844; 3.10.10, 1440; 7.12.10, 2373; 28.11.10, 2312; 21.9.10, 1285; 20.8.11, 4904; 20.9.10, 1214; 28.8.11, 4950; 18.8.10, 799, 800; 17.6.10, 788; 14.6.10, 755; 23.7.10, 775, 772; 16.7.10, 770, 771; 9.7.10, 768; 9.8.10, 780; 8.8.10, 779; 27.5.10, 741; 22.6.10, 765; 20.8.10, 824, 823; 26.8.10, 878; 13.9.10, 1152; 23.8.10, 851; 30.8.10, 948, 955; 27.8.10, 885; 24.8.10, 861, 862; 22.8.10, 845; 25.5.10, 925; 5.4.11, 3900, 4078; 18.3.11, 3750; 31.3.11, 3998, 3997; 25.3.11, 2899; 1.4.11, 4020; 7.4.11, 3487, 4108; 20.3.11, 3899; 1.4.11, 4024; 7.4.11, 3487, 4108; 20.3.11, 3761; 29.4.11, 4321; 10.4.11, 4144; 12.4.11, 4175, 4174; 16.5.11, 4478; 11.8.11, 4794; 20.5.11, 4805; 26.6.11, 4630; 16.6.11, 4600; 10.7.11, 4674; 6.8.11, 4747, 4746; 8.6.11, 4571, 4572; 12.7.11, 4688; 3.6.11, 4556; 10.7.11, 4677.

M.T. 3, 16.8.11, 4829, 4828, 4827; 3.10.10, 1447, 1448; 6.12.10, 2364; 3.12.10, 2351; 25.9.10, 1352; 22.9.10, 1304; 20.9.10, 1269, 1270; 27.9.10, 1387; 11.9.10, 1110; 30.8.11, 5045, 5046, 5047, 5044; 29.8.11, 5026, 5024; 29.3.11, 3939, 3940, 3944; 2.4.11, 4040; 5.4.11, 4082; 25.3.11, 3902; 1.4.11, 4022, 4021; 2.4.11, 4041; 29.3.11, 3941, 3942, 3938; 6.3.11, 3452; 6.2.11, 3105; 28.2.11, 3326; 31.12.10, 2654; 13.1.11, 2801, 2802; 19.4.11, 4289; 16.4.11, 4208, 4209; 11.5.11, 4416; 11.4.11, 4169, 4168; 16.1.11, 4212; 15.5.11, 4448; 17.4.11, 4227, 4224; 5.5.11, 4380; 27.4.11, 4311; 10.5.11, 4402; 1.5.11, 4341; 7.4.11, 4111, 4113; 9.4.11, 4125; 13.11.10, 2121; 30.7.11, 4724, 4722; 4723; 27.7.11, 4193; 10.7.11, 4682, 4681, 4683, 4680; 25.6.11, 4628, 4629; 10.6.11, 4538, 4579, 4582; 28.5.11, 4536; 31.9.11, 4731; 11.8.11, 4802; 12.6.11, 4593, 4589; 20.5.11, 4509; 31.5.11, 4544, 4542; 22.6.11, 4673; 16.6.11, 4602; 7.6.11, 4564; 26.6.11, 4616; 20.6.11, 7.8.11, 4752; 4.6.11, 4558; 31.7.11, 4637; 16.6.11, 4586; 21.6.11, 4622; 27.5.11, 4531; 11.6.11, 4584; 14.6.11, 4596; 19.6.11, 4614; 4.6.11, 4559; 17.6.11, 4606; 8.8.11, 4575; 18.6.11, 4611; 2.8.11, 4738; 10.8.11, 4754, 4787, 4785; 22.5.11, 4515, 4516; 7.7.11, 4636; 4.6.11, 4860; 13.6.11, 4595; 24.10.10, 1818; 17.8.11, 4883, 4858, 4854, 4863.

*Pyretophorus alpines*, Theobald (1911).

Rep. Direc. Vet. Research Lab., 1911, p. 243.

Two typical females. Apparently uncommon; specimens labelled:—M.T. 1, 2.4.11, 4026; M.T. 2, 15.2.11, 3181.

*Pyretophorus transvaalensis*, Carter (1910).

The Entomologist, p. 237, October, 1910.

Two typical females only in the collection, labelled M.T. 3, 12.3.11, 3612 and 25.10.10, 1842.

*Pyretophorus cinereus*, Theobald (1901).

Mono. Culicid. I., 161 (1901).

M.T. 3, 14.10.10, 1628, 1571; 17.9.10, 1232; 28.9.10, 1351; 27.9.10, 1388; 15.9.10, 1182.

M.T. 2, 9.9.10, 1066; 22.3.11, 3837.

M.T. 1, 31.10.10, 1889; 27.10.10, 1847.

GENUS *CELLIA*, THEOBALD.

*Cellia pretoriensis*, Gough (1910).

Rep. Gov. Veterinary Bac. (Transvaal), 1908-09, p. 117.

A number of specimens of this distinct species labelled as follows:—

- M.T. 1, 15.12.10, 2462; 6.3.11, 3441; 7.3.11, 3483; 5.3.11, 3424, 3422; 26.3.11, 3907; 30.3.11, 3972; 29.3.11, 3930; 1.4.11, 4017; 9.2.11, 3140; 26.1.11, 2943; 30.1.11, 3021; 3.3.11, 3363; 13.2.11, 3170; 22.2.11, 3239, 3237; 13.2.11, 3171; 3.1.11, 2428; 11.1.11, 2766.
- M.T. 2, 19.11.10, 2200; 18.11.10, 2189; 27.11.10, 2301; 2.4.11, 4036; 22.2.11, 3243; 28.12.10, 2598; 16.4.11, 4205; 13.6.11, 4594; 12.8.11, 4805; 17.8.11, 4862, 4846.
- M.T. 3, 29.3.11, 3938; 6.3.11, 3452; 10.3.11, 3547; 28.3.11, 3925; 23.2.11, 3263; 7.2.11, 3109; 10.1.11, 2746.

*Cellia squamosa*, Theobald (1901).

*Anopheles squamosa*, Theobald (1901).

Mono. Culicid I., p. 167 (1901); III. 109 (1903); V. 70 (1910).

A large number of this species occur in the collection labelled as follows:—

- M.T. 2, 17.8.11, 4840; 5.10.10, 1460; 15.10.10, 1638; 21.9.10, 1266; 23.9.10, 1309; 24.9.10, 1326; 26.9.10, 1360; 7.3.11, 3486, 3405; 1.4.11, 4019; 22.2.11, 3242, 3244, 3241; 5.9.11, 3091; 21.12.10, 2568; 12.1.11, 2796; 15.1.11, 2829; 18.1.11, 2853; 28.12.10, 2593; 11.4.11, 4162; 16.4.11, 4206; 28.4.11, 4162; 11.5.11, 4418; 16.6.11, 4599; 28.4.11, 4315.
- M.T. 3, 11, 2207; 19, 2208; 20, 2410; 10, 2420; 24.9.10, 1331; 29.3.11, 3945, 3943; 10.3.11, 3549; 28.3.11, 3926; 20.3.11, 3763; 27.2.11, 3310; 3.2.11, 3069; 12.2.10, 3164; 22.2.11, 3249; 21.12.10, 2579; 12.1.11, 2797; 10.1.11, 2747; 9.1.11, 2742; 7.4.11, 4112; 13.4.11, 4183; 27.4.11, 4308; 28.4.11, 4319; 3.10.10, 1976; 1.11.10, 1940; 27.5.11, 4533; 12.8.11, 4806.
- M.T. 1, 8.2.11, 3136, 3137; 3.3.11, 3364; 18.2.11, 3196, 3197; 24.2.11, 3265; 16.2.11, 3183, 3235, 3236, 3238; 24.2.11, 3278; 3.2.11, 3069; 15.2.11, 3179, 3180; 18.2.11, 3194; 10.2.11, 3148; 1.11.10, 1916; 9.8.11, 4756; 1.6.11, 4515; 25.5.11, 4523; 15.8.11, 4810; 16.8.11, 4820; 15.12.10, 2461; 20.12.10, 2502; 25.11.10, 2275; 8.12.10, 2377; 7.5.11, 3482; 29.3.11, 3929; 7.3.11, 3484; 5.3.11, 3423; 4.3.11, 3401; 25.3.11, 3894; 4.3.11, 3404; 6.3.11, 3439, 3440; 25.3.11, 3893; 4.3.11, 3400; 16.4.11, 4202; 4.5.11, 4371.

*Celia argenteolobata*, Gough (1910).

Rep. Gov. Vet. Bac., Transvaal (1910).

Five females all similar to the type labelled as below:—

- M.T. 2, 6.9.10, 1020 (female); 5.10.10, 1461 (female); 8.12.10, 2378 (female); 6.3.11, 3448 (female).
- M.T. 1, 24.8.10, 853 (female).

## CULICINAE.

GENUS MUCIDUS, *THEOBALD*.

*Mucidus africanus*, Theobald (1901).

Mono. Culicid., I, 274 (1901); III, 134 (1903); IV, 163 (1907);  
V. 126 (1910).

Two females, labelled M.T. 1, 16.2.11, 3185; and M.T. 3, 7.1.11, 2728.

Edwards considers this species the same as *Mucidus mucidus*. Karsch, it is quite distinct in structure of the unguis and in markings. He also considers *M. grabhamii* Theobald to be the same. They are totally distinct. The type had five spots on the wing fringe in *africanus*—and in all I have seen. According to Edwards the type has now seven!!

GENUS THEOBALDIA, *NEVEU-LAMAIRE*.

*Theobaldia spathipalpis*, Rondani (1872).

*Culex spathipalpis*, Rondani (1872).

*Culex longiareolatus*, Macquart.

Bull. Soc. Ent. Italy, IV, 31.12 (1872), Rondani; Mono. Culicid. I, 339 (1901); III, 154 (1903); IV, 276 (1907); V, 273 (1910),  
Theobald.

A single male only found in the collections labelled "O.P. August, 1910."

GENUS STEGOMYIA, *THEOBALD*.

*Stegomyia argenteopunctata*, Theobald (1901).

Mono. Culicid., I, 316 (1901); V.18 (1910).

Evidently common as it occurs again in these collections plentifully labelled as below:—

M.T. 3, 21.11.10, 2236; 22.11.10, 2254; 27.11.10, 2302;  
13.3.00, 3625; 11.3.11, 3580; 28.2.11, 3327; 5.2.11, 3096;  
1.3.11, 3338; 22.2.11, 3252; 1.2.11, 3048; 24.12.10, 2551;  
7.1.11, 2729; 8.11.10, 2043; 11.11.10, 2097; 20.4.11,  
4300; 27.4.11, 4307; 16.12.11, 4892; 1.3.11, 3341.

M.T. 2, 7.4.11, 4109; 22.3.11, 3837; 25.1.11, 2946; 1.2.11,  
3044; 2.3.11, 3357; 17.1.4, 2850.

M.T. 1, 11.3.11, 3575; 21.3.11, 3812; 29.3.11, 3932; 7.4.11,  
4109; 27.3.11, 3009; 2.4.11, 4027; 25.1.11, 2934, 2936,  
2935; 12.2.11, 3161; 9.2.11, 3141; 28.1.11, 2988; 29.1.11,  
3013.

M.T. 1, 31.12.10, 2642; 8.1.11, 2706; 16.4.11, 4199; 15.2.11,  
3178.

M.S.F., 7.3.11, 3506.

*Stegomyia fasciata*, Fabricius (1808).

Syst. Antl. 36-13 (1805), Fabricius; Mono. Culicid. I, 289 (1901);  
III, 141 (1903); IV, 176 (1907); V, 158 (1910).

A single male and female only labelled:—M.S.F. VII, 20.3.11,  
3788, 3789.

GENUS SCUTOMYIA, THEOBALD.

*Scutomyia sugens*, Wiedmann (1828).

*Stegomyia sugens*, Theobald (1901).

*Culex sugens*, Wiedemann (1828).

*Culex vittatus*, Bigot (1861).

Auss. Zweifflug., Insec. I, 545, 1828 (Wiedemann); Mono. Culicid.  
I, 300 (1901); IV, 199 (1907); V, 201 (1910).

M.S.F., 27.2.11, 3314, 3311, 3313, 3315, 3312; 7.3.11, 3505.

M.S.D. 20.3.11, 3808, 3809, 3910. Nine females labelled as  
above.

GENUS CULEX, LINNÆUS.

*Culex hirsutipalpis*, Theobald (1901).

Mono. Culicid. I, 378 (1901); V, 342 (1910).

A single perfect female labelled M.S.D. 5.4.11, 4080.

Edwards places this species as a synonym of *Culex duttoni*, Theobald, it is quite distinct. The latter is the same however as *Culex dissimilis*, Theobald, the two being described at the same time under different names. *Culex anarmostus*, Theobald, which he also thinks may be *duttoni*, but the wing veination differs, a point however upon which not too much stress must be laid.

*Culex annulioris*, Theobald (1901).

Mono. Culicid. I, 371 (1901); III, 163 (1903); V, 336 (1910).

Two females labelled as follows:—M.S.F. 23.3.11, 3858, 3860.

*Culex hirsutum*, Theobald (1901).

Mono. Culicid. I, 392 (1901); V, 344 (1910).

Two females of this marked species occur labelled M.T. 1,  
16.4.11, 4238 and M.T. 3, 7.3.11, 3488.

Edwards considers this the same as *Culex transvaalensis*, Theobald. The two marked apical spots on both fifth and sixth abdominal segments in *Culex hirsutum* never occur in *Culex transvaalensis* and the thorax is differently ornamented. The type has either been altered or this young writer has been unable to appreciate the distinctive characters.

*Culex transvaalensis*, Theobald (1903).

Mono. Culicid. III, 165 (1903); V. 336 (1910).

A number of this marked species labelled as follows:—

M.T. 1, 7.3.11, 3472; 2.4.11, 4028; 18.1.11, 2866; 3.2.11, 3068; 23.1.11, 2910; 12.1.11, 2792; 18.5.11, 4491; 18.1.11, 2862; 27.12.10, 2583; 8.11.10, 2031; 14.11.10, 2125; 2.11.10, 1970; 23.3.11, 3857.

M.T. 2, 15.11.10, 2190; 10.3.11, 3548; 28.3.11, 3927.

M.T. 3, 4.2.11, 3085, 3095; 7.2.11, 3110.

As pointed out under *C. hirsutum*, Theobald, Edwards is in complete error in vaguely assuming this is the same as that marked species.

*Culex ataeniata*, Theobald (1910).

Rep. Dir. Vet. Research, p. 261 (1911).

Another typical female labelled M.T. 3, 2.3.11, 3361.

*Culex tigripes*, Grandpré (1900).

Planters Gaz. Press. Les Monst (1900), Grandpré; Mono. Culicid. II, 34 (1901); III, 227 (1903); V, 392 (1910).

Several typical females occur in the collection labelled as follows:

M.T. 3, 17.12.10, 2485 (male); M.S.F. 22.2.11, 3257, 3255, 3256; 16.3.11, 3708, 3710; 23.3.11, 3859.

M.S.D. 27.3.11, 3915, 3913, 3912, 3914; 16.3.11, 3708; 19.2.11, 3221; 24.2.11, 3276.

*Culex cumminsii*, Theobald (1903).

Mono. Culicid. III, 214 (1903); V, 395 (1910).

One typical female labelled M.T. 1, 19.8.11, 4876.

This is also found in Uganda and the Bahr-el-Ghazal. Edwards erroneously places *Culicada fuscopalpalis* Theobald as a synonym of this species, it has basal pale abdominal bands never seen in *cumminsii* and is totally distinct, so is *Culicada mediopunctata*, Theobald.

*Culex theileri*, Theobald (1903).

Mono. Culicid. III, 187 (1903); V. 356 (1910).

Edwards considers that *C. pettigrewi*, Theobald, from India is the same as *theileri*. There is no connection. Evidently one of the commonest species in the Onderstepoort district.

M.T. 2, 17.8.11, 4845, 4843, 4842, 4841, 4839, 4837; 7.9.10, 1023; 8.9.10, 1037; 5.9.10, 978, 990, 989, 986, 983, 984, 982; 16.8.11, 4826, 4825, 4824, 4823; 8.9.10, 1035;

12.9.10, 1132; 6.9.10, 1008, 1089, 1007, 1006; 16.8.11, 4822; 6.9.10, 1004; 5.9.10, 1003, 1002, 1001, 1000, 999, 987, 997, 996, 995, 994, 993 (very small), 985; 7.9.10, 1027, 1028, 1026, 1025; 16.8.11, 4821; 6.9.10, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1010; 5.9.10, 981, 980; 8.9.10, 1038, 1039, 1034; 7.9.10, 1035, 1029, 1030; 9.9.10, 1061, 1062, 1063, 1064, 1065, 1068, 1069; 6.9.10, 1005; 11.9.10, 1109, 1108, 1107, 1106, 1105, 1104; 5.9.10, 998; 12.9.10, 1129, 1128; 5.9.10, 977, 988, 1134, 1133, 1131, 1130; 5.9.10, 978; 13.9.10, 1153; 15.9.10, 1181, 1180, 1179; 7.9.10, 1032; 15.9.10, 1178; 14.9.10, 1170, 1169; 8.9.10, 1036; 10.9.10, 1092; 1.10.10, 1420, 1419, 1421, 1422, 1423, 1416, 1418, 1417; 10.10.10, 1567; 15.10.10, 1639; 9.10.10, 1530; 6.10.10, 1019; 21.8.11, 4930; 13.12.10, 2423, 2422; 1.12.10, 2326; 11.12.10, 2410; 6.12.10, 2060; 21.11.10, 2232; 17.11.10, 2176; 13.12.10, 2426; 20.8.11, 4909, 4905, 4913, 4906, 4910, 4908; 21.8.11, 4925, 4926; 20.9.10, 1267, 1265; 18.9.10, 1238, 1237; 21.9.10, 1288; 20.9.10, 1268, 1266; 19.9.10, 1249, 1250; 30.9.10, 1406; 21.9.10, 1287; 19.9.10, 1251, 1252; 17.9.10, 1227; 19.9.10, 1248; 22.9.10, 1301; 30.9.10, 1406; 18.6.10, 761; 19.8.10, 807; 21.8.10, 840; 22.8.10, 846; 20.8.10, 828; 25.8.10, 872; 18.8.10, 804; 19.6.10, 762; 30.8.11, 5035, 5036, 4994, 5039, 5040, 5021; 25.8.11, 4983; 23.8.11, 4948, 4949; 24.8.11, 4966, 4967; 18.6.10, 760; 20.8.10, 827; 18.8.10, 805; 25.8.10, 870; 11.6.10, 751; 14.7.10, 769; 1.6.10, 753; 6.6.10, 749; 17.8.10, 786; 19.6.10, 763; 16.8.10, 734; 18.8.10, 801; 8.6.10, 750; 7.8.10, 778; 20.6.10, 764; 22.6.10, 767; 25.8.10, 871; 28.8.10, 928; 3.9.10, 971; 20.8.10, 821, 926, 930; 28.8.10, 927, 929; 18.8.10, 806; 3.9.10, 972; 20.8.10, 825; 3.9.10, 973; 29.8.10, 946; 20.8.10, 829; 1.9.10, 956; 25.8.10, 873; 25.8.10, 874; 4.9.10, 975; 4.9.10, 974; 21.8.10, 842; 27.8.10, 887; 29.8.10, 946; 20.8.10, 825; 3.9.10, 972; 27.8.10, 888; 28.8.10, 926; 20.8.10, 826; 3.9.10, 971; 4.3.11, 4071; 2.4.11, 4037, 4029; 31.3.11, 3999; 8.3.11, 3510; 2.4.11, 4038; 22.3.11, 3826; 24.3.11, 3864, 3865; 3.4.11, 4867; 8.3.11, 3511; 29.3.11, 3736; 5.4.11, 4080; 3.4.11, 4070; 24.3.11, 3866, 3867; 5.4.11, 4079, 4081; 6.3.11, 3451; 29.3.11, 3935; 3.4.11, 4068, 4069; 15.3.11, 3692; 22.3.11, 3834; 31.3.11, 4000; 7.4.11, 4110; 17.3.11, 3731; 27.2.11, 3306; 17.2.11, 3192; 26.2.11, 3287, 3288; 1.3.11, 3332; 18.2.11, 3199; 1.3.11, 3331; 12.2.10, 3162; 27.2.11, 3302, 3303; 29.2.11, 3210, 3209; 12.1.11, 2793; 23.8.11, 4947; 31.12.10, 2645, 2644; 28.8.11, 4946; 27.12.11, 2588; 19.5.11, 4498, 4499; 17.4.11, 4221, 4222; 12.4.11, 4179; 4.5.11, 4372; 9.4.11, 4123; 2.5.11, 4349; 3.5.11, 4365; 12.4.11, 4180; 16.4.11, 4203; 9.5.11, 4391; 23.4.11, 4268; 10.5.11, 4398; 28.4.11, 4316; 16.4.11, 4204; 12.4.11, 4181, 4178; 11.4.11, 4167; 9.5.11, 4390; 2.5.11, 4350; 8.4.11, 4118; 11.11.11, 4164; 14.5.11, 4443; 11.4.11, 4165; 8.4.11, 4116; 11.5.11, 4409; 14.5.11, 4406; 9.11.10, 2064; 10.11.10, 2067; 31.10.10,

1898, 1896, 1901; 7.11.10, 2023; 2.11.10, 1967, 1966;  
 21.8.11, 4929; 15.4.11, 4141; 17.4.11, 4219; 2.5.11, 4348;  
 26.5.11, 4526; 10.7.11, 4678; 20.5.11, 4504; 18.8.11, 4703;  
 21.7.11, 4691; 30.7.11, 4719, 4721; 8.8.11, 4755; 26.7.11,  
 4701; 7.8.11, 4751; 30.7.11, 4720; 26.7.11, 4700; 9.8.11,  
 4717; 15.6.11, 4597; 9.8.11, 4769; 30.7.11, 4718; 26.7.11,  
 4698; 10.7.11, 4675; 28.7.11, 4712; 30.7.11, 4717; 10.7.11,  
 4676; 9.8.11, 4773; 3.6.11, 4739; 1.8.11, 4736; 29.7.11,  
 4714; 9.8.11, 4761; 11.8.11, 4793; 9.8.11, 4772, 4768;  
 18.6.11, 4609; 20.5.11, 4507; 9.8.11, 4771; 8.6.11, 4570;  
 20.5.11, 4506; 2.7.11, 4633; 13.5.11, 4420; 9.4.11, 4122;  
 17.10.10, 1680; 27.10.10, 1849; 25.10.10, 1835; 18.10.10,  
 1733; 23.10.10, 1794.

M.T. 1, 17.8.11, 4836, 4835, 4834, 4833, 4831, 4830, 4828;  
 16.8.11, 4819, 4818, 4815; 18.12.10, 2392; 28.11.10, 2310;  
 7.12.10, 2266; 6.12.10, 2352, 2383, 2354; 6.12.10, 2355,  
 2359, 2357, 2356, 2358; 19.12.10, 2490; 11.12.10, 2402;  
 28.11.10, 2309; 8.12.10, 2375; 20.11.10, 2210, 2217, 2218;  
 21.11.10, 2220, 2223, 2221; 28.11.10, 2311; 18.12.10, 2391;  
 22.11.10, 2240; 21.8.11, 4915, 4916, 4917, 4918, 4919,  
 4923, 4925, 4926, 4900, 4899, 4901, 4898; 28.8.10, 903,  
 914; 24.8.10, 855; 29.8.11, 5017, 5035, 5038, 5037; 25.8.11,  
 4981, 4982, 4977, 4978, 4979, 4980, 4963, 4954; 20.8.10,  
 813; 30.8.10, 951; 23.8.10, 847; 29.8.10, 938; 18.8.10, 791;  
 20.8.10, 818; 28.8.10, 894; 21.8.10, 836; 24.8.10, 858;  
 18.8.10, 795; 20.8.10, 817; 21.8.10, 839; 24.8.10, 857;  
 28.8.10, 897; 20.8.10, 816; 28.8.10, 920; 20.8.10, 815;  
 28.8.10, 923, 919, 895, 918; 20.8.10, 814; 29.8.10, 936;  
 28.8.10, 892, 915, 900; 26.8.10, 877; 21.8.10, 838; 26.8.10,  
 876; 29.8.10, 937; 30.8.10, 954; 18.8.10, 791; 21.8.10, 837;  
 24.8.10, 859; 28.8.10, 898; 29.8.10, 940, 916, 893, 921,  
 939; 18.8.10, 792; 29.8.10, 942, 934; 25.8.10, 867; 30.8.10,  
 952, 953; 18.8.10, 794; 28.8.10, 899; 29.8.10, 859, 931,  
 944, 943; 25.8.10, 868; 28.8.10, 913, 908; 18.8.10, 790;  
 28.8.10, 894, 908, 901, 909, 911; 20.8.10, 812, 820; 29.8.10,  
 945; 28.8.10, 927, 923, 302, 906, 904, 905, 907; 30.8.10,  
 950, 891; 22.8.10, 843, 844; 18.8.10, 788, 789; 25.8.10, 867,  
 865, 866; 27.8.10, 884; 20.8.10, 819; 1.4.11, 4013, 4014;  
 6.3.11, 3445, 3442; 29.3.11, 3934, 3933; 30.3.11, 2896,  
 3951, 3960, 3954, 3971, 3964; 7.3.11, 3467; 2.4.11, 4033,  
 4034; 5.4.11, 4073; 4.3.11, 3402, 3405; 25.3.11, 3897;  
 5.3.11, 3431, 3428; 2.4.11, 4030; 14.3.11, 3637; 3.4.11,  
 4039, 4060, 4066; 13.3.11, 3616; 7.3.11, 3480; 30.3.11,  
 3967, 3968, 3965; 6.4.11, 4096, 4095; 17.4.11, 4104, 4105,  
 4106, 4107; 30.3.11, 3957, 3966, 3961, 3958, 3969; 18.3.11,  
 3748; 5.3.11, 3436, 3426, 3429; 7.3.11, 3958, 3469, 3474;  
 21.3.11, 3811, 3814, 3474, 3815; 25.3.11, 3895; 2.4.11,  
 4029, 4032; 3.4.11, 4064, 4062, 4063, 4061, 4058; 15.3.11,  
 3691; 16.3.11, 3703; 22.3.11, 3831, 3830, 9.3.11, 3523,  
 3524; 7.3.11, 3467, 3470, 3481; 6.3.11, 3447, 3446, 3443;  
 11.3.11, 3573; 14.3.11, 3638; 13.3.11, 3615; 30.3.11, 3953,  
 3955; 26.2.11, 3282, 3284, 3283, 3281; 22.2.11, 3233;

2.3.11 3354; 23.1.11, 2908, 2907; 29.2.11, 3204; 20.2.11, 3218, 3220; 30.1.11, 3022; 15.2.11, 3195; 28.2.11, 3323; 29.2.11, 3206, 3205; 13.2.11, 3173; 28.1.11, 2987; 3.3.11, 3369, 3365; 21.2.11, 3228; 22.2.11, 3234; 28.2.11, 3321; 3317; 26.1.11, 2942; 16.2.11, 3184; 26.2.11, 3285; 20.2.11, 3216, 3219; 13.2.11, 3172; 12.2.11, 3157; 28.1.11, 3226; 20.1.11, 2879; 11.2.11, 3152, 3150; 3.3.11, 3366; 8.2.11, 3135; 1.3.11, 3330; 24.2.11, 3267, 32661, 3264; 17.2.11, 3190; 3.3.11, 3367; 12.12.11, 3159; 19.2.11, 3207; 28.2.11, 3319, 3320; 21.2.11, 3229, 3225, 3227; 2.3.11, 3355; 29.1.11, 2877; 11.2.11, 3151; 2.3.11, 3351, 3352; 26.12.10, 2572, 2570; 22.12.10, 2508, 2520; 30.12.10, 2556, 2623, 2624, 2622, 2625, 2621; 2.1.11, 2671, 2668; 18.1.11, 2864, 2860, 2858, 2889, 2861; 29.12.10, 2608; 23.8.11, 4944; 27.12.10, 2581; 5.1.11, 2508; 12.1.11, 2791; 31.12.10, 2637, 2640, 2644, 2643, 2636; 24.12.10, 2542; 25.12.10, 2553, 2554; 13.1.11, 2799; 2.1.11, 2793, 2670, 5676, 2676, 2672, 2673, 2675; 1.1.10, 2660; 4.1.11, 2693, 2695, 2695, 2697, 2698, 2700, 2694; 5.1.11, 2707, 2707; 31.12.10, 2639, 2640, 2638, 2635, 2633, 2641; 10.1.11, 2744; 6.1.11, 2715, 2716; 11.1.11, 2768, 2769, 2767; 14.1.11, 2817; 17.1.11, 2846, 2841, 2843; 13.1.11, 2798; 1.12.10, 2634; 29.12.10, 2609; 18.1.11, 2863; 24.12.10, 2544; 7.1.11, 2725; 26.12.10, 2571; 24.12.10, 2545; 16.4.11, 4200, 4194, 4198; 11.4.11, 4188; 26.4.11, 4297; 17.4.11, 4215; 12.4.11, 4172; 8.4.11, 4115; 27.4.11, 4304; 12.4.11, 4173; 10.4.11, 4143; 11.5.11, 4407; 20.5.11, 4500; 17.4.11, 4213; 9.5.11, 4387; 1.11.10, 1913, 1914, 1915; 2.11.10, 1951, 1952, 1953, 1954, 1955; 6.11.10, 2011; 9.11.10, 2046, 2047; 15.11.10, 2132, 2134; 31.10.10, 1887; 10.4.11, 4141; 6.11.10, 2009; 18.4.11, 4114; 10.8.11, 4782, 4780, 4811, 4701; 18.7.11, 4689; 9.8.11, 4758, 4763, 4757, 4764, 4710, 4764, 4759, 4762; 18.6.11, 4607; 11.8.11, 4709, 4790, 4792; 2.6.11, 4550; 10.7.11, 4672; 27.7.11, 4703; 17.6.11, 4605; 12.8.11, 4803, 4804; 12.7.11, 4686; 20.5.11, 4503, 4501; 28.7.11, 4717; 23.5.11, 4517; 12.6.11, 4587; 23.5.11, 4518; 8.7.11, 4669; 6.8.11, 4744, 4764, 476, 4765; 4.8.11, 4741; 16.5.11, 4476; 9.5.11, 4388; 6.5.11, 4408; 28.10.10, 1851, 1852, 1854, 1853, 1855, 1856; 16.10.10, 1656, 1660, 1648, 1649, 1653, 1652, 1663, 1662, 1654, 1661, 1655; 25.10.10, 1829, 1828, 1832; 17.10.10, 1691, 1699, 1695, 1696, 1698; 24.10.10, 1806, 1803, 1800, 1801, 1804, 1805, 1799; 18.10.10, 1721, 1720; 24.10.10, 1807, 1802; 27.10.10, 1846; 20.10.10, 1755, 1756, 1757; 7.6.11, 4562; 15.8.11, 4812; 9.8.11, 4766, 4777; 31.1.11, 4727; 11.8.11, 4791; 16.6.11, 4598.

M.T. 3, 8.9.10, 1056, 1057; 11.9.10, 1176; 8.9.10, 1046, 1045, 1044, 1043, 1042, 1041, 1055, 1054, 1053, 1052, 1051, 1050, 1049, 1048, 1047; 9.9.10, 1085, 1084, 1083, 1082; 9.9.10, 1081, 1080, 1089, 1086, 1078, 1077, 1076, 1075, 1074, 1073, 1072, 1071; 10.9.10, 1100, 1101, 1174, 1099, 1098, 1097, 1096, 1091; 11.9.10, 1127, 1126, 1125, 1124, 1123, 1122,

1121, 1120, 1119, 1118, 1117, 1115, 1116, 1114, 1112;  
 12.9.10, 1146, 1147, 1145, 1144, 1143, 1142, 1141, 1140,  
 1139, 1138, 1137, 1136; 13.9.10, 1166, 1165, 1164, 1163,  
 1162, 1161, 1160, 1159, 1158, 1157, 1156, 1155; 12.9.10,  
 1151, 1150, 1149; 16.9.10, 1200, 1201; 15.9.10, 1184, 1185,  
 1183; 14.9.10, 1173, 1172, 1171; 13.9.10, 1167, 1168;  
 10.9.10, 1095; 8.9.10, 1040; 2.10.10, 1436; 4.10.10, 1456;  
 1.10.10, 1427; 3.10.10, 1446; 5.10.10, 1466; 9.10.10, 1548,  
 1549, 1550; 10.10.10, 1572, 1573, 1574, 1575, 1576;  
 13.10.10, 1616, 1617; 10.10.10, 1577, 1578, 1579; 21.8.11,  
 4932; 20.11.10, 2217, 2218; 21.11.10, 2237, 2238; 26.11.10,  
 2293, 2294; 17.11.10, 2183, 2177; 18.11.10, 2192; 5.12.10,  
 2343; 28.9.10, 1403, 1278, 1405, 1402, 1404; 24.9.10, 1332;  
 19.8.11, 4896; 26.9.10, 1369, 1368, 1370; 20.9.10, 1277,  
 1271, 1272, 1276, 1274, 1275; 19.9.10, 1259, 1260, 1261,  
 1262, 1255, 1256; 25.9.10, 1349, 1347; 21.9.10, 1370, 1243,  
 1290, 1291, 1292; 18.9.10, 1237; 17.9.10, 1231; 22.9.10,  
 1302; 23.9.10, 1318; 30.9.10, 1409; 24.8.11, 4972, 4973;  
 26.8.11, 4998, 4999, 5000, 5002, 5027, 5052, 5054, 5055,  
 5053, 5056, 5049; 24.8.11, 4974, 4975; 17.7.10, 773; 8.3.11,  
 3512, 3515; 31.3.11, 4002; 7.3.11, 3489, 3490; 25.3.11, 3902,  
 3905; 29.3.11, 3948, 3946, 3947; 5.3.11, 3435, 3904, 3436,  
 3434; 30.3.11, 3976, 3977, 3974; 17.3.11, 3734; 16.3.11,  
 3705, 3706; 14.3.11, 3642; 27.2.11, 3309, 3308; 1.3.11,  
 3340, 3334, 3335, 3339; 26.2.11, 3295, 3296, 3294, 3293,  
 3290; 21.2.11, 3232; 22.7.11, 2904; 3.3.11, 3372; 22.1.11,  
 2904; 17.2.11, 3193; 29.4.8 (?); 1.3.11, 3333; 2.2.11, 3064;  
 24.1.11, 2926, 2929; 22.2.11, 3245; 26.2.11, 3292; 31.12.10,  
 2655, 2649, 2650, 2651; 6.1.11, 2722, 2720; 4.1.11, 2699,  
 2703; 4.1.11, 2704, 2705, 2701, 2697, 2698, 2700, 2702;  
 31.12.10, 2656; 6.1.11, 2723, 2721; 24.12.10, 2550;  
 29.12.10, 2690; 28.12.10, 2604; 5.1.11, 2711; 2.5.11, 4354;  
 11.5.11, 4414; 23.4.11, 4275; 17.4.11, 4223; 9.11.10, 2048,  
 2049, 2054, 2051, 2052, 2053; 10.11.10, 2074, 2078, 2079;  
 15.11.10, 2146, 2149, 2147; 11.11.10, 2103; 2.11.10, 1972,  
 1973, 1971; 31.10.10, 1906, 1907, 1908, 1909, 1910;  
 14.4.11, 4187; 20.7.11, 4690; 8.6.11, 4577; 9.8.11, 4777;  
 25.5.11, 4325; 11.8.11, 4791, 4800, 4801; 9.8.11, 4775;  
 11.5.11, 4788; 6.8.11, 4775; 31.5.11, 4543; 27.5.11, 2530;  
 18.6.11, 4612; 21.7.11, 4692; 30.7.11, 4725; 29.7.11, 4716;  
 25.4.11, 4290; 16.10.10, 1670, 1668, 1666, 1667; 25.10.10,  
 1839, 1843, 1840; 24.10.10, 1825, 1819, 1821, 1824, 1820,  
 1826, 1822, 1823; 18.10.10, 1739, 1740, 1738, 1741;  
 28.10.10, 1826; 26.10.10, 1861; 17.10.10, 1673, 1701, 1702;  
 23.10.10, 1797, 1798; 29.10.10, 1874; 30.10.10, 1884, 1885.

O.P., August, 1910, 4 Females (no numbers).

M.S.F., 5.4.11, 4084, 4086, 4085, 4090, 4087, 4088.

M.S.D., 25.3.11, 3891, 3892, 4090, 4094; 1.3.11, 3345, 3344,  
 3346; 11.3.11, 3584, 3583; 17.2.11, 3205, 3207; 13.3.11,  
 3630; 7.3.11, 3502; 19.3.11, 3224; 17.2.11, 3204.

*CULEX ONDERSTEEPOORTENSIS*, Theobald (1910).

Rep. Direct. Vet. Research, Transvaal, p. 265, 1911.

Two females only found in the collection, labelled

M.T. 1, 7.3.11, 3478; and

M.T. 2, 12.4.11, 4166.

*Culex pallidopunctata*, Theobald (1910).

Rep. Direct. Vet. Research, Transvaal, p. 267 (1911).

A number of females labelled as below:—

M.T. 3, 5.10.10, 1465; 10.4.11, 4146; 1.11.10, 1945; 6.5.11, 4386; 30.8.11, 5052; 10.11.10, 2077, 2081; 1.11.10, 1944; 30.3.11, 3975; 22.3.11, 3838; 16.3.11, 3704; 30.1.11, 3025, 3026; 22.2.11, 3251, 3246, 3066, 3250; 18.2.11, 3202; 19.1.11; 2876; 31.1.11, 3035; 24.1.11, 2930, 2932; 25.1.11, 19.1.11, 2876; 31.1.11, 3033; 24.1.11, 2930, 2932; 25.1.11, 2946, 2994, 2939; 28.2.11, 3329; 2.2.11, 3065; 12.2.10, 3165, 3166, 3167, 20.1.11, 2882; 21.2.11, 3231; 29.1.11, 3018; 5.1.11, 2712; 6.1.11, 2719; 31.12.10, 2652; 11.1.11, 2776; 26.12.10, 2605.

M.T. 2, 14.4.11, 4186; 10.4.11, 4145; 7.11.10, 2024; 25.11.11, 4347, 8.4.11, 4117; 21.4.11, 4254; 4.3.11, 4072, 3406; 6.3.11, 3450; 29.1.11, 3014; 30.12.10, 2632; 12.1.11, 2794, 2795; 5.1.11, 2710; 17.1.11, 2847, 2848; 21.3.11, 2817; 18.3.11, 3749; 9.3.11, 3142; 18.1.11, 2867; 27.2.11, 3305, 3304; 8.2.11, 3138, 3139; 24.1.11, 2927, 2925, 2926; 2.2.11, 3063; 19.1.11, 2875; 18.2.11, 3139; 24.1.11, 2927, 2925, 292.6; 2.2.11, 3063; 19.1.11, 2875; 18.2.11, 3198; 11.2.11, 3153; 21.1.11, 2899, 2895, 2894, 2896; 1.2.11, 3041, 3039; 7.2.11, 3106; 30.1.11, 3024, 3023; 25.1.11, 2944; 23.2.11, 3259; 5.2.11, 3092, 3090; 4.2.11, 3084; 3.3.11, 3371.

M.T. 1, 16.4.11, 4196; 24.1.11, 2921.

M.S. 2, 3.3.11, 3374.

M.S.F., 23.3.11, 3861; 16.3.11, 3709; 11.3.11, 3592; 22.2.11, 3254; 11.3.11, 3593; 20.3.11, 3789; 1.3.11, 3342.

M.S.D., 5.4.11, 4092, 4093; 27.3.11, 3910, 3911; 13.3.11, 3626; 11.3.11, 3582, 3585; 24.2.11, 3274; 13.3.11, 3633.

M.S.D.V., 23.2.11.

*Culex goughii*, Theobald (1910).

Rep. Direct. Vet. Res., Transvaal (1911).

Four females only detected in this collection, labelled

M.T. 3, 16.9.10, 1199; 1.10.10, 1426; 10.9.10, 474.

M.T. 2, 9.9.10, 1070.

*Culex salisburyensis*, Theobald (1910).

Mono. Culicid., II, 113 (1901); III, 221 (1903); IV, 452 (1907). Male.

Several females all showing the marked apical banding on all the abdominal segments, labelled as follows:—

M.T. 1, 29.6.11, 4631; M.T. 2, 26.7.11, 4699; M.T. 3, 12.9.10, 1148; 16.3.11, 4603, 4815; 14.8.11, 4809; 5.8.11, 4743; 7.6.11, 4563.

*Culex bostockii*, Theobald (1905).

Journ. Eco. Biol. 129 (1905); Mono. Culicid. IV, 444 (1907).

One marked female labelled M.T. 3, 27.6.11.

Edwards imagines this to be the former species, as the distinguishing characters have already been given nothing further need be said.

*Culex quasiguiarti*, Theobald (1910).

Mono. Culicid. V, 374 (1910).

Several females of this distinct species occur in the collection labelled as follows:—

M.T. 1, 6.4.11, 4201; 3.4.11, 4065; 5.4.11, 4074; 8.3.11, 3508; 14.3.11, 3639; 30.3.11, 3963.  
M.T. 3, 11.3.11, 3581; 7.3.11, 3491; 25.3.11, 3906.

Edwards places this as a synonym of *Culex zombaensis*. Theob. They are quite distinct, the latter has basal pale abdominal bands which never occur in *quasiguiarti*. This species is also quite distinct from the next having basal white lateral spots.

*Culex guiarti*, Blanchard (1905).

*Culex viridis*, Theobald (1903).

Les Moust. 629, 1905; Mono. Culicid. III, 212 (1903).

Two females from Onderstepoort, August.

Edwards places my *C. neavei* as a synonym of this—it is not having basal white lateral spots and different veination. It may however be synonymous with *quasiguiarti*, but I do not think so.

*Culex minutus*, Theobald (1905).

Journ. Eco. Biol. 1.30 (1905); Mono. Culicid. IV, 445 (1907).

A number of females and three males of this obscure species labelled as below:—

M.T. 3, 13.9.10, 1168; 18.11.11, 4243; 11.3.11, 3579; 28.2.11, 3328; 30.5.11, 4541; 20.5.11, 4510; 9.8.11, 4779.  
M.T. 2, 2.5.11, 4351; 22.5.11, 4512.

- M.T. 1, 15.1.11, 2827, 2828; 10.5.11, 4396, 4397; 3.1.11, 2687; 7.3.11, 3465; 22.10.10, 1786.  
 M.S.F. VII, 2.3, 15.3.11; M.S.D. 3672.  
 M.S.D. 3.3.11, 3373; 19.2.11, 3223; 24.2.11, 3275, 3277  
 11.3.11, 3587.  
 M.S.D. IX, 27.2.11; M.S.F. 20.3.11, 3794.  
 M.S.D. III, 20.2.11; M.S.D. 14.3.11, 3669.  
 M.S.D. XII, M.S.F. 24.2.11, 3279; 11.3.11, 3594.

Edwards places this species as a synonym of *Culex decens*. Theobald, and also evidently to save trouble in separating them includes *C. masculus*, *C. nigrocostalis* Theo. and *C. lividocostalis* Graham under the same species. The very marked *Heptaphlebotomyia simplex* Theo. he includes partly in this species and partly in *C. univittatus* Theo. He says the "British Museum series of *H. simplex* consisted of 3 females and 1 male *C. univittatus* (including type of *H. simplex*) and one male *C. decens* labelled as type of *H. simplex*. *Culex univittatus* has no 7th vein seen in *simplex*—they are totally distinct. Someone must have altered the specimens.

*Culex simpsoni*, Theobald (1905).

Journ. Eco. Biol. 1.28 (1905); Mono. Culicid. IV, 441 (1907).

- M.T. 3, 18.1.11, 2868; 26.3.11, 3289, 3291; 16.2.11, 3187;  
 22.1.11, 2905; 6.5.11, 4385; 2.4.11, 4042.

Evidently very abundant from the large number recorded below :

- M.T. 2, 19.1.11, 2874; 16.2.11, 3186; 22.1.11, 2901, 9411,  
 4121; 20.4.11, 4245; 16.4.11, 4207; 11.1.11, 2774; 8.4.11,  
 4119; 5.5.11, 4379; 11.5.11, 4411; 27.3.11, 396.  
 M.T. 1, 17.3.11, 3191; 19.2.11, 3208; 13.2.11, 3174; 26.1.11,  
 2941; 20.2.11, 3217; 27.2.11, 2398; 8.2.11, 3134; 28.2.11,  
 3318; 1.2.11, 3038; 19.4.11, 4237; 1.11.10, 1911;  
 16.10.10; 18.10.10, 30.3.11, 3952.  
 M.S.D. X., 28.2.11. M.S.F., 22.3.11, 3819, 3818. M.S.D.  
 V, 28.2.11. M.S.F. 22.3.11, 3825. M.S.D. XIV,  
 28.2.11, M.S.F., 22.3.11, 3822. M.S.F. X, 27.2.11.  
 M.S.F., 24.3.11, 3886. M.S.F., 23.3.1, 3862. M.S.F. II.,  
 26.2.11. M.S.F., 20.3.11, 3807. M.S.F. II., 26.2.11.  
 M.S.F., 20.3.11, 3807. M.S.D. XIII., 27.2.11. M.S.F.,  
 24.3.1, 3884. M.S.D. XIV., 28.2.11. M.S.F., 22.3.11,  
 3822. M.S.F. XI., 26.2.11. M.S.F., 22.3.11, 3822.  
 M.S.F. XI., 26.2.11. M.S.F., 22.3.11, 3826. M.S.D. V.,  
 28.2.11. M.S.F., 22.3.11, 3824. M.S.D. III., 1.3.11.  
 M.S.F., 22.3.11, 3824. M.S.D. III., 1.3.11. M.S.F.,  
 24.3.11, 3875. M.S.F. XIII., 28.2.11. M.S.F., 24.3.11, 3882.  
 M.S.D. XIII., 27.2.11. M.S.F., 24.3.11, 3883. M.S.F.  
 XI., 26.3.11. M.S.F., 22.3.11, 3827. M.S.F. XII.,  
 28.2.11. M.S.F., 24.3.11, 3881. M.S.F. XII., 27.2.11.  
 M.S.F., 24.3.11, 3879. M.S.F. V., 25.3.11. M.S.F.,  
 22.3.11, 3821. M.S.F. XII., 27.2.11. M.S.F., 24.3.11,  
 3880. M.S.F. X., 27.2.11. M.S.F., 24.3.11, 3885.  
 M.S.D. III., 1.3.11. M.S.F., 24.3.11, 3876. M.S.F. II.,

23.3.11. M.S.D., 15.3.11, 3679. M.S.F. XIV., 2-3.3.11.  
 M.S.F., 20.3.11, 3780. M.S.F. III., 26.2.11. M.S.F.,  
 20.3.11, 3782. M.S.F. IV., 2-3.3.11. M.S.D., 3681.  
 M.S.F. XXI., 13.3.11. M.S.D., 3699. M.S.F. X.,  
 28.2.11. M.S.F., 17.3.11, 3738. M.S.D. IX., 28.2.11,  
 M.S.F., 20.3.11, 3765. M.S.F. V., 2-3.3.11. M.S.D.  
 16.3.11, 3720. M.S.F. XVI., 2-3.3.11. M.S.F., 3771.  
 M.S.D. VI., 28.2.11. M.S.F., 20.3.11, 3769. M.S.F.  
 XXII, 2-3.3.11. M.S.F., 20.3.11, 3773. M.S.F. XI.,  
 28.2.11. M.S.D., 15.3.11, 3695. M.S.F., X., 2-3.3.11.  
 M.S.D., 15.3.11, 3693. M.S.D. XV., 27.2.11. M.S.F.  
 15.3.11, 3697. M.S.F. I., 2-3.3.11. M.S.D., 14.3.11,  
 3664. M.S.D. II., 20.2.11. M.S.D., 15.3.11, 3687;  
 M.F.S. I., 26.2.11. M.S.F., 20.3.11, 3802. M.F.S.  
 XIV., 26.2.11. M.S.D., 16.3.11, 3713. M.S.D. VI.,  
 27.2.11. M.S.D., 15.3.11, 3674. M.S.F. III., 2-3.3.11.  
 M.S.D., 15.3.11, 3682. M.S.F. VI., 2-3.3.11. M.S.D.,  
 16.3.11, 3714. M.S.F. X., 2-3.3.11. M.S.D., 16.3.11,  
 3716. M.S.D. VIII., 28.2.11. M.S.D., 16.3.11, 3716.  
 M.S.F. XI., 2-3.3.11. M.S.F., 17.3.11, 3737; M.S.F.  
 XV., 2-3.3.11. M.S.D., 16.3.11, 3722. M.S.F. XIII.,  
 2-3.3.11. M.S.F., 20.3.11, 3767. M.S.D. VI., 28.3.11.  
 M.S.F., 20.3.11, 3768. M.S.D. IX., 28.2.11. M.S.F.,  
 20.3.11, 3764. M.S.D. III., 27.2.11. M.S.F. 20.3.11,  
 3787. M.S.F. V., 2-3.3.11. M.S.D., 16.3.11, 3721.  
 M.S.D. IX., 27.2.11. M.S.F. 20.3.11, 3793. M.S.F.,  
 III., 2-3.3.11. M.S.D., 15.3.11, 3683. M.S.D. VIII.,  
 28.2.11. M.S.D. 16.3.11, 3716. M.S.F. X., 2-3.3.11.  
 M.S.D., 15.3.11, 3694. M.S.F. VI., 2-3.3.11. M.S.D.  
 16.3.11, 3714. M.S.F. III., 2-3.3.11. M.S.D. 15.3.11,  
 3682. M.S.D. VI., 27.2.11. M.S.D. 15.3.11, 3674.  
 M.S.F. XIV., 26.2.11. M.S.D. 16.3.11, 3713. M.S.F.  
 XXII., 2-3.3.11. M.S.F. 20.3.11, 3772. M.S.D. XVIII.,  
 27.2.11. M.S.F. 20.3.11, 3785. M.S.F. XVII, 2-3.3.11.  
 M.S.F. 20.3.11, 3805. M.S.F. XXI. 2-3.3.11. M.S.D.  
 13.3.11, 3700. M.S.D. VIII., 28.3.11. M.S.D. 16.3.11,  
 3717. M.S.F. III. 2-3.3.11. M.S.D. 15.3.11, 3683.  
 M.S.D. IX., 27.2.11. M.S.F. 20.3.11, 3793. M.S.D. V.,  
 2-3.3.11. M.S.D., 16.3.11, 3721. M.S.D. III., 27.2.11.  
 M.S.F. 20.3.11, 3787. M.S.D. IX., 28.2.11. M.S.F.  
 20.3.11, 3764. M.S.D. XVII., 27.2.11. M.S.F. 20.3.11,  
 3784. M.S.F. XIV., 2-3.3.11. M.S.F. 20.3.11, 3781.  
 M.S.D. XI., 27.2.11. M.S.D. 16.3.11, 3724. M.S.D.  
 XI., 27.2.11. M.S.D. 16.3.11, 3725. M.S.F. VIII.,  
 27.2.11. M.S.D. 16.3.11, 3726. M.S.F. VIII., 27.2.11.  
 M.S.D. 16.3.11, 3727. M.S.D. IX., 28.2.11. M.S.F.  
 17.3.11, 3744. M.S.D. IX., 28.2.11. M.S.F. 17.3.11,  
 3744. M.S.F. XV., 27.2.11. M.S.F. 17.3.11, 3746, 3747.  
 M.S.F. XIV., 27.2.11. M.S.F. 20.3.11, 3797. M.S.F.  
 V., 26.2.11. M.S.F. 20.3.11, 3799. M.S.D. X., 27.2.11.  
 M.S.F. 20.3.11, 3802. M.S.F. XVIII., 2-3.3.11. M.S.F.  
 20.3.11, 3776, 3777. M.S.F. XV 2-3.3.11. M.S.D. 16.3.11,  
 3723. M.S.D. X. 27.2.10. M.S.F. 20.3.11, 3801.

M.S.D. III., 27.2.10. M.S.F. 20.3.11, 3786. M.S.F. XIII., 2-3.3.11. M.S.F. 20.3.11, 3766. M.S.F. XVI., 2-3.3.11. M.S.F. 20.3.11, 3770. M.S.F. I., 26.2.11. M.S.F. 20.3.11, 3804. M.S.F. V., 26.2.11. M.S.F. 20.3.11, 3800. M.S.F. XII., 2-3.3.11. M.S.F. 20.3.11, 3778, 3779. M.S.F. XV., 26.2.11. M.S.F. 20.3.11, 3796, 3795. M.S.F. VIII., 2-3.3.11. M.S.F. 20.3.11, 3775, 3774. M.S.F. X., 28.2.11. M.S.F. 17.3.11, 3739. M.S.D. V., 27.2.11. M.S.F. 20.3.11, 3790, 3791. M.S.F. XIII., 27.2.11. M.S.F. 20.3.11, 3743. M.S.F. XX., 2-3.3.11. M.S.F. 17.3.11, 3744, 3742, 3740. M.S.F. XIII., 26.2.11. M.S.F. 17.3.11, 3729. M.S.D. IV., 27.2.11. M.S.D. 15.3.11, 3701. M.S.D. VII., 28.2.11. M.S.D. 15.3.11, 3684. M.S.D. I., 21.2.11. M.S.D. 14.3.11, 3667. M.S.F. II., 2-3.3.11. M.S.D. 15.3.11, 3678. M.S.D. VI., 23.3.11. M.S.D. 13.3.11, 3636. M.S.O. XV., 27.2.11. M.S.D. 15.3.11, 3698. M.S.F. I., 2-3.3.11. M.S.D. 14.3.11, 3665. M.S.D. VII., 21.2.11. M.S.D. 13.3.11, 3632. M.S.F. IV., 2-3.3.11. M.S.D. 15.3.11, 3680. M.S.D. II., 20.2.11. M.S.D. 15.3.11, 3686. M.S.F. IX., 2-3.3.11. M.S.D. 15.3.11, 3677. M.S.D. VIII., 27.2.11. M.S.D. 14.3.11, 3660. M.S.F. XIX., 2-3.3.11. M.S.D. 15.3.11, 3671. M.S.D. VI., 23.2.11. M.S.D. 13.3.11, 3635. M.S.D. III., 20.2.11. M.S.D. 14.3.11, 3668. M.S.D. VII., 21.2.11. M.S.D. 13.3.11, 3632. M.S.D. XII., 28.2.11. M.S.D. 14.3.11, 3663. M.S.O. IV., 27.2.11. M.S.D. 15.3.11, 3701. M.S.D. V., 23.2.11. M.S.D. 13.3.11, 3634. M.S.D. IV., 27.2.11. M.S.D. 15.3.11, 3702. M.S.D. VII., 28.2.11. M.S.D. 15.3.11, 3684, 3685. M.S.D. I., 21.2.11. M.S.D. 14.3.11, 2666. M.S.F. XIV., 26.2.11. M.S.D. 16.3.11, 3712. M.S.F. VI., 2-3.3.11. M.S.D. 16.2.11, 3715. M.S.F. IV., 2-3.3.11. M.S.D. 15.3.11, 3689. M.S.F. XX., 2-3.3.11. M.S.F. 17.3.11, 3741, 3740. M.S.F. XII., 2-3.3.11. M.S.F. 20.3.11, 3778. M.S.F. XV., 27.2.11. M.S.F. 17.3.11, 3746. M.S.D. XI., 27.2.11. M.S.D. 16.3.11, 3724. M.S.F. XIV., 27.2.11. M.S.F. 20.3.11, 3798, 3797. M.S.D. III., 27.2.11. M.S.F. 20.3.11, 3786. M.S.F. VIII., 2-3.3.11, 3775. M.S.F. II., 2-3.3.11. M.S.D. 15.3.11, 3678. M.S.F. IX., 2-3.3.11. M.S.D. 15.3.11, 3677. M.S.D. VIII., 27.2.11. M.S.D. 14.3.11, 3661. M.S.F. XIV., 2-3.3.11. M.S.F. 20.3.11, 3781. M.S.F. V., 26.2.11. M.S.F. 20.3.11, 3799. M.S.F. XIII., 2-3.3.11. M.S.F. 20.3.11, 3766. M.S.F. XV., 26.2.11. M.S.F. 20.3.11, 3795. M.S.D. V., 27.2.11. M.S.F. 20.3.11, 3791. M.S.D. VI., 23.2.11. M.S.D. 13.3.11, 3636. M.S.F. IX., 2-3.3.11. M.S.D. 15.3.11, 3676. M.S.F. XIX., 2-3.3.11. M.S.D. 15.3.11, 3670. M.S.D. VII., 21.2.11. M.S.D. 13.3.11, 3631. M.S.F. VII., 2-3.3.11. M.S.D. 15.3.11, 3673. M.S.D. VI., 27.2.11. M.S.D. 15.2.11, 3675. M.S.F. VII., 2-3.3.11. M.S.F. 20.3.11, 3806. M.S.F. XIII., 26.2.11. M.S.F. 17.3.11, 3729, 3728. M.S.F. III., 26.2.11. M.S.F.

- 20.3.11, 3783. M.S.F. XI., 2-3.3.11. M.S.F. 17.3.11, 3736. M.S.D. VIII., 27.2.11. M.S.D. 14.3.11, 3660. M.S.D. XV., 27.2.11. M.S.D. 15.3.11, 3698. M.S.F. VIII., 2-3.3.11. M.S.F. 20.3.11, 3774. M.S.D. X., 27.2.11. M.S.F. 20.3.11, 3802.  
 M.S.D. 13.3.11, 3627; 7.3.11, 3501, 3503, 3507; 1.3.11, 3349, 3348, 3343, 3347.  
 M.S.D. 3.3.11, 3376, 3375; 11.3.11, 3586; 24.2.11, 3278; 19.2.11, 3222.  
 M.S.F. 16.3.11, 3711; 22.2.11, 3258; 11.3.11, 3595; 24.2.11, 3280; 20.3.11, 3760; 7.3.11, 3507; 1.3.11, 3343; 22.2.11, 3253; 16.3.11, 3707.

GENUS BANKSINELLA, THEOBALD.

*Banksinella luteolateralis*, Theobald (1901).

Mono. Culicid., II (1901); IV, 469 (1907); V, 403 (1910).

A number of typical females labelled as follows:—

- M.T. 1, 21.11.10, 2222; 13.3.11, 3620; 27.1.11, 2955; 24.1.11, 2922.  
 M.T. 2, 19.11.10, 2201; 17.11.10, 2173; 25.1.11, 2938; 1.2.11, 3040, 3043; 27.1.11, 2957; 31.1.11, 3032; 21.1.11, 2898; 25.1.11, 2945; 19.2.11, 3211; 11.1.11, 2775; 10.11.10, 20681; 12.11.10, 2109; 11.11.10, 2085; 16.11.10, 2154.  
 M.T. 3, 21.11.10, 2239; 27.11.10, 2303; 17.11.10, 2184, 2181, 2182; 2.12.10, 2343; 2.2.11, 2067; 22.1.11, 2903; 3.2.11, 3070; 13.2.11, 3176; 8.11.10, 2044; 10.11.10, 2076, 2080; 12.11.10, 2112, 2113; 11.11.10, 2102; 13.11.10, 2120; 4.11.10, 2001; 31.10.10, 1905; 20.5.11, 4511 (Pale scaled lateral thoracic areas).

Edwards\* without apparently having had time to study the Culicidae, imagines *B. chrysothorax*, Theob., from Ashanti to be this species. It is quite distinct. The thorax is golden scaled all over and the male claspers differ.

GENUS CHRYSOCONOPS, Goeldi.

*Chrysoconops fuscopennatus*, Theobald (1907).

*Culex drynoeciis*, Speiser (1909).

Mono. Culicid., III., 265 (1907); Kiliman. Meru. Exp. Dipt. Orth. 42 (1909).

Four females and 1 male occur in the collections labelled as below:—

- M.T. 1, 18.11.10, 2188 (female); 26.11.10, 2286 (female); 17.1.11, 2839 (female).  
 M.T. 2, 16.12.10, 2471 (male); 18.1.11, 2863.

\*The African Species of *Culex* and allied Genera, p. 245 Bull. Ent. Research II., 1911, F. W. Edwards.

Edwards for some inexplicable reason places this insect in Arribalzaga's genus *Taeniorhynchus*—of which *titillans* Walker is the type; one could not find two more totally different Culicids, nor does it in the least resemble Arribalzaga's *fasciolatus* which the latter author also placed with *titillans*. It really lies close to Goeldi's *C. fulvus*. Wied, quite a distinct group. Edwards appears to suffer from strange hallucinations.

GENUS *TAENIORHYNCHUS*, Arribalzaga (in part).

*Taeniorhynchus africanus*, Theobald (1901).

*Mansonia africana*, Theobald (1901).

*Panoplites africanus*, Blanchard (1901).

Mono. Culicid., II., 187 (1901); III., 273 (1903); V., 449 (1910);  
Nov. Culicidae, I., p. 19 (1910).

Eleven females in the collections, and several apparently this species, but too damaged to name. Specimens identified labelled:—

M.T. 1, 4.3.11, 3408; 10.3.11, 3525; 3542; 17.1.11, 2842;  
M.T. 2, 3.11.10, 1974.  
M.T. 2, 3.11.10, 1894.  
M.T. 3, 20.11.10, 2216; 18.12.10, 2489; 9.3.11, 3525; 13.1.11,  
2803; 2.3.11, 3360.

Edwards evidently without proper examination or through not having sufficient knowledge, considers the African species the same as *uniformis* Theob. from Asia. He also sinks the very different *major* Theob. and *nigerrimus* Theob. as synonyms and places them all in my genus *Mansonioides*: Nothing further need be said of such strange muddling.

GENUS *PSEUDOTAENIORHYNCHUS*, Theobald (1911).

*Taeniorhynchus*, Theob. (1901).

Novae Culicidae, I., 18 (1911).

*PSEUDOTAENIORHYNCHUS QUASIGELIDUS*, Theob. (1911).

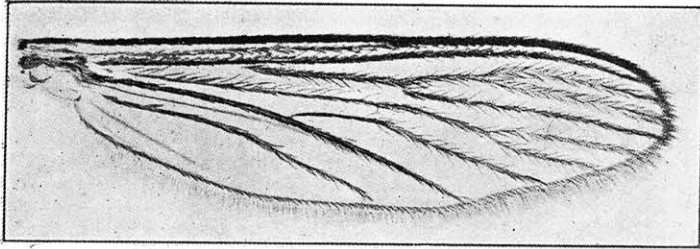
*Culex quasigelidus*, Theob. (1903).

*Taeniorhynchus tenax* v. *maculipes*, Theob. (1905).

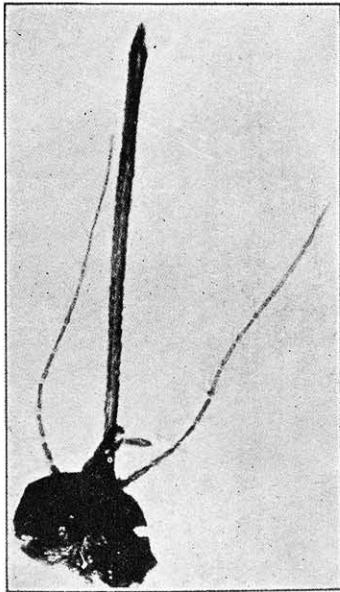
Mono. Culicid., III., 181 (1903); IV., 372 (1907); First Rept., Gord.  
Coll., Well. Labs., 79 (1905).

Several females labelled as follows:—

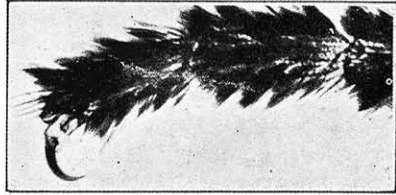
M.T. 2, 14.4.11, 4185; M.T. 3, 11.5.11, 4413; M.S.F., 11.3.11,  
3590, 3591, 3588, 3589; 13.3.11, 3628, 3629.



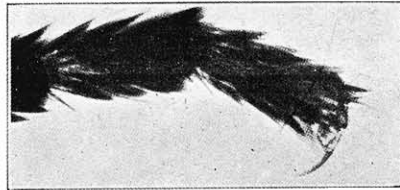
A



B



C

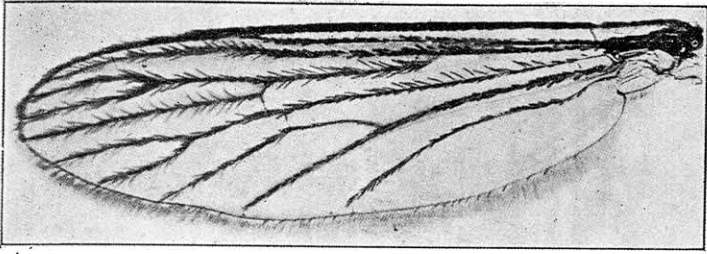


D

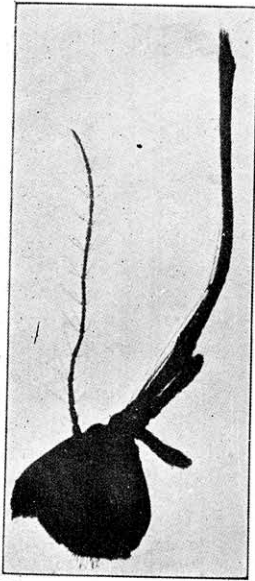


E

Plate No. 34.] *Pseudohowardina lineata*. Nov. Sp.  
A, wing ; B, head ; C, D, and E, fore, middle and hind unguis of ♀



A



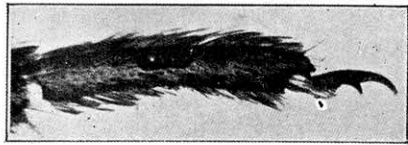
B



C



D



E

Plate No. 35.] *Grabhamia caballa*. Nov. Sp.  
COLL. BY A, wing; B, head of ♀; C, D, E, fore, middle and hind legs. ♀

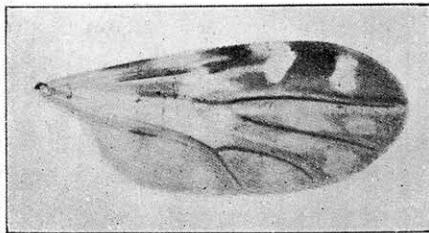


Plate No. 36.] Wing of *Culicoides milnei*. Austen.

*Taeniorhynchus tenax* v. *maculipes* and v. *arabiensis* Patton are the same as my *C. quasigelidus* erroneously placed in *Leucomyia*. There is not the least connection between *ventrillous Pseudoheptaphlebomyia madagascarensis* and this species as Edwards imagines.

*Pseudotaeniorhynchus tenax*, Theobald (1903).

*Taeniorhynchus tenax*, Theobald (1903).

*Culex tigripes* v. *consimilis*, Newstead (1907).

Mono. Culicid., III., 258 (1903); Anns. Trop. Medicine, I., 23 (1907).

Several females occur in this collection labelled as follows:—

M.T. 1, 7.3.11, 3471; 29.3.11, 3937; 30.3.11, 3970; 15.3.11, 3689; 11.3.11, 3574; 29.2.11, 3203; 12.2.11, 3158.

M.T. 2, 10.2.11, 3149; 19.5.11, 4497. M.T. 3, 10.3.11, 3546; 17.3.11, 3732; 3733; 22.2.11, 3248.

O.P., December, 1910, 2538, 2539, 2540.

There is no connection between this species and my *pseudoannulioris* from Ashanti as Edwards states, the legs of the latter have narrow basal pale bands, in *tenax* the banding involves both sides of the joints.

### III.

#### OTHER BITING NEMATOCEROUS FLIES.

##### FAMILY SIMULIDAE.

##### GENUS SIMULIUM.

*Simulium* sp. nov.?

Four specimens which appear to belong to a new species, two labelled as follows:—

M.T. 1, 22.10.10, 1795; and

M.T. 3, 17.9.10, 1229, and two unlabelled.

##### FAMILY CHIRONOMIDAE.

##### GENUS CULICOIDES.

*Culicoides milnei*, Austen (1909).

(See Plate 36.)

Annals and Magazine of Natural History, Ser. 8, Vol. III., p. 283 (1909).

M.T. 2, 18.11.10, 2188; 19.11.10, 2206; 2.11.10, 1957, 1958, 1959, 1964, 1963; 1.11.10, 1925, 1924, 1920, 1932; 3.11.10, 1984, 1987, 1990, 1978, 1989; 4.11.10, 1993, 1996; 6.11.10,

2013; 7.11.10, 2031, 2032, 2030, 2028, 2026; 8.11.10, 2039, 2036, 2038; 9.11.10, 2060, 2063; 12.11.10, 2107; 15.11.10, 2140, 2143, 21351; 16.11.10, 2160; 31.10.10, 1897, 1960, 1900, 1892, 1893; 17.10.10, 1686; 21.10.10, 1776; 20.10.10, 1759, 1762, 1760; 22.10.10, 1787; 24.10.10, 1815, 1810, 1811; 28.10.10, 1860; 1859; 28.10.10, 1837, 1836; 21.10.10, 1777, 1778.

Also recorded from Nairobi, East Africa Protectorate, 5,000 feet, May, in rainy season invading bedrooms at night. Abounds in grass on Athi plains in wet weather.

FAMILY *PSYCHODIDAE*.

GENUS *PHLEBOTOMUS*.

*Phlebotomus sp. nov.*

Several specimens labelled as follows:—

M.T. 2, 2.10.10, 1430; 24.9.10, 1319; 28.9.10, 1392. M.T. 3, 21.9.10, 1289.